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ABSTRACT

This study is to explore cinemagraphic and visual elements and their inter-relations through the reinterpretation of previous research and literature. The cinemagraphic elements of visual images (camera angle, camera motion, subject motion, color, and lighting) work as a language requiring a proper grammar for the messages to be conveyed in their most potent form. If the elements are ungrammatical they will create a dissonance that will negate one of the perceptual dimensions. Some elements, such as camera angles, work universally to affect potency and activity. They can also indirectly heighten or nullify perceived evaluation if the visual cues from the camera position (activity and potency) are not in harmony with the apparent activity of the subject. Some elements are very irregular and must be conjugated individually, as with lighting, which significantly affects evaluation but is much stronger when coupled with the person/object in question. Yet other elements act as modifiers that work only in the presence of other modifiers, as the panning shot that enhances the color perception affecting evaluation. Studies should be undertaken to explore the effect of observer involvement through the camera, the relationship of interest, stress, and the attitudinal and physiological scores, as well as lighting styles and their effects on the perception as recorded by the semantic differential. The visual elements of cinema may be simple tools, but they create a subtle and complex language that needs to be learned in order for its full eloquence to be used and appreciated. (HOD)

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THE EFFECT OF SELECTED CINEMAGRAPHIC ELEMENTS ON AUDIENCE PERCEPTION OF MEDIATED CONCEPTS

Quinn Orr

When producing a mediated presentation, great care is usually taken in preparing the script so that it accurately portrays, or conveys the information desired to the audience. When it comes to the visual preparation, however, not so much care or deliberation is usually involved. Should a newsman go on the air and start to editorialize over a hard news story, his credibility would be questioned, as this is drifting from the unbiased role that he must maintain. If a cameraman starts to editorialize by use of the many visual elements available to him, however, it is not so easily noticed and therefore left alone. Visual images and cinemagraphic techniques can be powerful but very little attention has been given to them as a method of effecting the judgment, or perception of information presented in mediated messages.

This study is to explore cinemagraphic and visual elements and their interrelations through the reinterpretation of previous research and literature. It is written in hopes of making the first faltering step towards a "visual thesaurus" to embellish the mediated message in a more precise way through the visual media.

THE INFLUENCE OF VISUALS

Percy Tannenbaum has written that "one way an index may influence the effects of a communication is, of course, in terms of attracting attention to that message. If a particular cue or cue combination within the total message structure somehow raises the threshold of attention for that message and guides its selection over other messages, then it has served to influence

its potentiality for effect." (Tannenbaum 1955)

Certain visual "indexes" or "elements" effect our perceptions it is true, but what affects us and in what way? Does the method have to be something that we are aware of or consciously label if it is a visual thing? George S. Klein et al. (1958) showed us that we do not have to be aware of a visual element to let it affect our judgments of our perceptions. By tachistoscopically superimposing pictures associated with male and female genitalia over neutral line drawings of human faces, the subjects consistantly tended to incorporate or exclude the attributes of the superimposed sex on their impression of the human figures shown.

Gerald Guthrie et al. (1966) further supports this point, with his study of subject response to increasing levels of exposure tachistoscopically. A new element was introduced in this study, however, in that the experiment was also designed to investigate whether subjects responded predictably to variations in structural attributes of line. The hypothesis of the first experiment was that the response to angular-type lines would be negative and the response to curved lines would be positive. Likewise that thick lines would be negative and thin positive. The results indicated a difference as predicted, between the angularity and curvedness of a line, at the .01 level. The thick/thin relationship was not significant. Guthrie also replicated Eagles' experiment (1959) of subliminally introducing a benevolent and manevolent figure at increasing increments. The first cognitive impressions perceived by the subjects were angular for the aggressive scenes and curved for the benevolent, although the pictures were designed to contain the same amount of angularity. This response seems to indicate that some visual information entered the mind and influenced the perception although it was not a piece of information that could be consciously perceived. It also suggests that we associate certain

visual characteristics with percepted evaluation. Such "supraliminal" elements or stimuli that the mind registers, but does not focus on, have a great potential for message enhancement.

A great deal of deliberation has already taken place in the realm of differing perceptions resulting from the effects of various film editing techniques (Goldberg 1951; Isenhour 1975; Worth 1968). This approach seems a little premature. It is sentence construction before vocabulary.

The boundaries of this studies universe are the most commonly used elements in cinematography: camera angle, camera motion, subject motion, color and lighting. In most previous studies the semantic differential was used to record the subjects' responses, which proved to be a great boon for interpreting interrelationships. For measuring the aspect of the physiological responses, the GSR was used because of its wide acceptance and reliability in measuring response. (Ruckmick, 1933; Kaiser and Roessler, 1970)

CAMERA ANGLES

Several studies have been done on camera angles and their effects. Tiemens (1967) did a study which gave some heartening results in unravelling the effects of camera angle. The myriads of film directors will tell you that a low camera angle makes a person appear more powerful and a high one more weak and passive, but little formal research and approach had been done prior to Tiemens.

In order to test Tiemens' hypothesis, three male news announcers were recorded three times on videotape, each reading a different news story. Each time a different camera angle was used - one at eye level, one 18 inches above eye level, and one 18 inches below, all from 4½ feet away and a 90 mm. lens on the camera. The combination of angles and announcers was changed for each test group. Three groups of 33 students were taken as subjects from the beginning speech classes at Wayne State University, Michigan. The group then rated each

speaker on a semantic differential for being communicative, knowledgeable, authoritative and convincing. It was expected that a significant correlation between the angles and the students' perceptions of the announcers would be found. Two of the three stories chosen, however, dealt with politically volatile issues from the students' home area. This was suspected as having an invalidating effect on the students' response to the two announcers.

The third announcer, however, had a more neutral story and the response proved very interesting. A high camera angle resulted in his being rated as least communicative, least knowledgeable and least authoritative. Those who viewed him from the low angle rated him as being most communicative, most knowledgeable and most authoritative.

CAMERA ANGLES AND SUBJECT MOTION

Although Tiemens chose not to rely heavily upon this information because of the problems with the opinionated story, a later study by Mandell and Shaw (1973) further supports his original findings. Mandell also theorized that manipulation of the camera could have a predictable effect on the audience. He also chose at this time to test the effect of subject motion in conjunction with camera angle. Although motion does not seem to have an effect on recall of information presented (Miller 1969), it did exert a preferential influence on a number of other attitude factors. A 4 minute 20 second news broadcast was taken from a local station. Several different versions were prepared using a high, low and medium angle shot of a man supposedly appointed to some governmental committee. Various levels of motion/activity were also matched to each angle. Sometimes he sat passively, sometimes he would move a pair of sunglasses in his hand, making gestures with them and finally putting them on at the end of the segment. In contrast to Tiemens, Mandell and Shaw chose a more subdued camera angle (12°) to try to keep the observers from being aware that the camera angle changes were deliberate.

The results of the semantic differential showed that the low angle coupled with motion resulted in a better rating for potency, evaluation and activity. In a passive condition, however, the lower angle, the lower the rating as far as the evaluation was concerned.

It would seem then that if the subject's activity does not correspond with the visual message of the camera angle, a negative evaluation is produced. Perhaps when the camera is low, expectations of activity and potency increase. If the activity of the subject does not support this perhaps a sort of dissonance is created that is reflected in the evaluative area.

If we are to continue the analogy of the elements of cinema being a language, we find that our camera angle is a non-evaluative adverb or adjective: a low angle making for greater strength and potency without connotation of good or bad unless it does not enhance the noun (subject) of the shot. In such cases a certain dissonance between them creates an inverse effect on the evaluation of the subject. Likewise, a high angle creates the impression of passivity, weakness, etc.

MOTION AND PERCEPTION

William C. Miller (1967) did a study on motion and its effect on affective perception using two versions of a selected film. One showed movement that we usually expect to see in normal films. The other was a filmograph, which was a series of frames taken from the movie and printed repeatedly in "freeze frame" fashion to give the same visual information without motion. Four versions were prepared: 1. All motion, 2. All filmograph, 3. First half motion, second filmograph, and 4. First half filmograph, second half motion. Each group of subjects viewed one of the four versions. Results of the analyses indicated there was no significant difference between the various treatment groups, as far as recall of information perception. The attitudinal and physiological (GSR) scores showed quite a different response.

There were significant findings for the climax section of the film showing more arousal for the motion group ($p=.01$). Attitudinal studies showed that a more favorable attitude was held toward the motion film. They also felt it was shorter than the filmograph ($p=.05$). Of the population that saw the versions of half movement-half filmograph, they consistently chose the most exciting moment in the motion half (.001) although the halves were changed to insure against content bias. A significantly higher rating on the attitude of the motion group reflected a greater involvement in the film (.01).

Although there were no group differences on information recall, or any relationship between arousal and recall, it should be noted that the groups did report an apparent difference in the perceived passage of time. Motion maintained attention better, left the audience with a more positive attitude and accounted for a quicker passage of time. From the point of view of a film producer, industrial or theatrical, this is important. A positive attitude in the learning experience is very valuable and should not be discounted. If there is no greater recall from motion, time apparently passes quicker which facilitates longer exposure without loss of attention or attitude, another valuable factor to consider.

VIEWER/CAMERA MOTION

Further steps to unravel the effects of visual elements were undertaken in a doctoral thesis undertaken by Dennis Smeltzer (1976). In an attempt to discover the relationship between male and female subjects of varying film viewing experience and how they reacted to various production techniques (methods of shooting), 29 students were shown 5 films depicting an identical incident (the inherent weakness in the whole study). Each was shot using one of 5 different cinematic techniques. The semantic differential and GSR results did not differentiate much between the various elements of camera work as

outlined in the dissertation. Certain weaknesses in the study doomed it to non-significance as a whole, but significant in its clues.

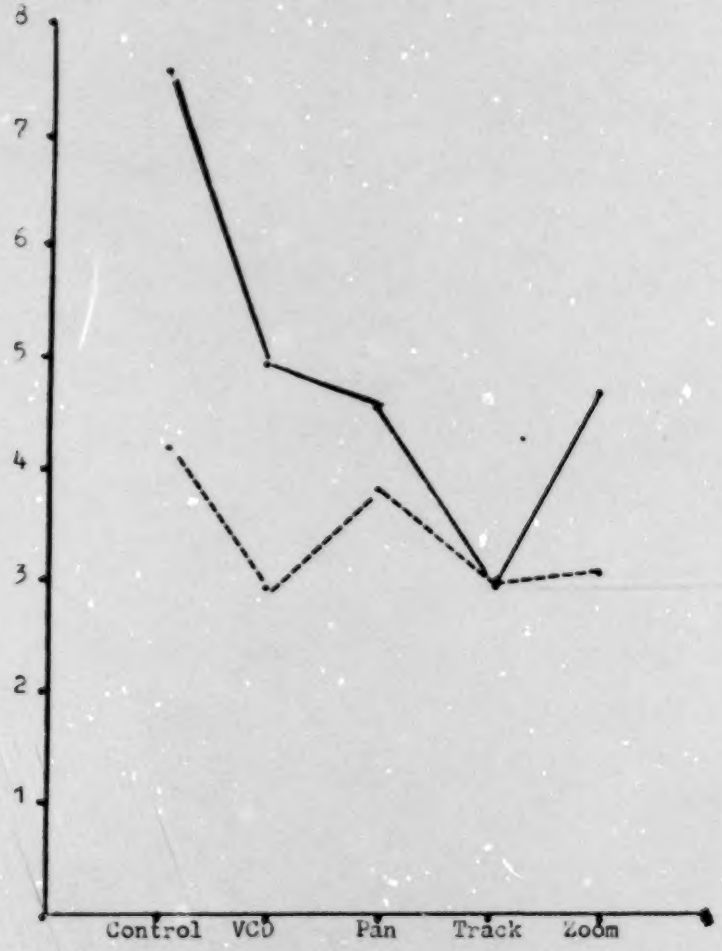
The elements tested by Smeltzer were control film, varying camera distance, panning, tracking and zooming (in that order). The results showed sporadic significance with over half of the significant interrelationships taking place in the tracking shots.

The approach taken by this study was not to analyze each of the techniques of production as individual exclusive methods, but rather to rearrange each treatment into a continuum that reflected "apparent viewer involvement" indicated by the approach of the camera. The least involving was the control script, consisting of a series of long shots, with no camera movement. The next was varying camera distances, consisting of long, medium, and close-up shots. These instantaneous changes could be interpreted as being similar to the selective attention methods of the mind. A zoom is more "involving" where subject and background are relatively static in relationship one to another, but we selectively become closer by the "zoom" effect. The movement of the background becomes the next phase of the continuum, the camera (viewer) remains fixed, but the subject and background are moving in relationship one to another. The last phase, of course, is the tracking shot, which gives total involvement to the viewer, as subject, background and camera all move simultaneously. This lends itself to heightened "subjectivity" through motion and hence, heightened involvement. This would support Miller's (1969) findings of motion creating more interest and Mandell's (1973) findings on motion enhancing other visual concepts.

When the mean GSR scores were plotted using Smeltzer's data and the continuum, the results appeared as shown on Figure 1.

Figure #1

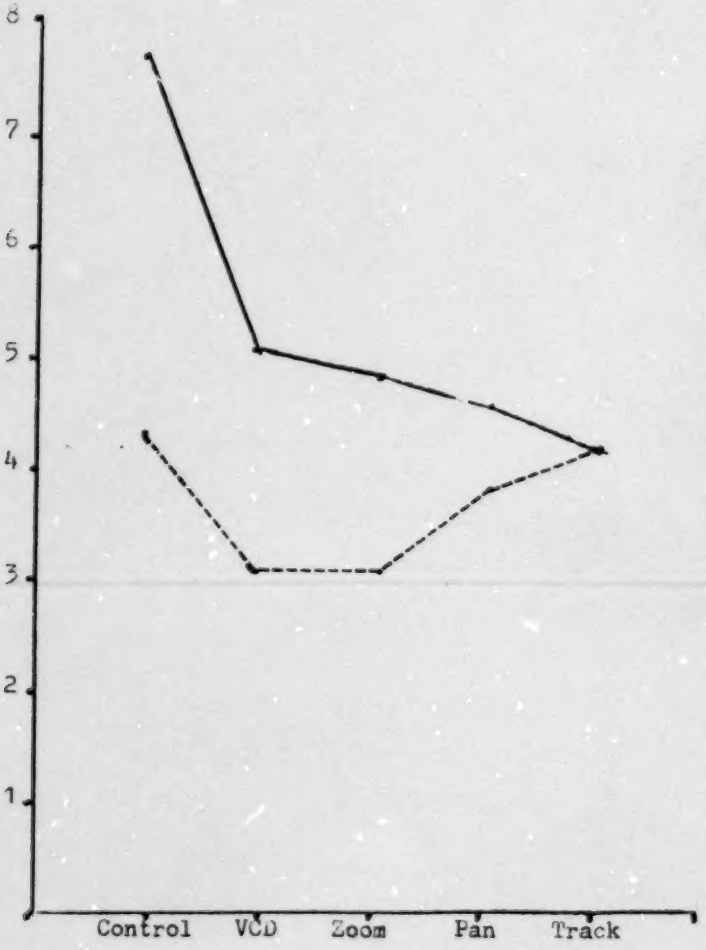
Smeltzers' GSR Score Graph



Male ———

Female - - - - -

Revised "Continuum" GSR Score Graph



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PLACE FIGURE 1 ABOUT HERE

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Sex difference obviously has an effect on perception but a channelling effect becomes apparent in that the more we move along the scale the more homogeneous the reactions become.

On a Spearman Rank Order Correlation of GSR scores to the various concepts tested by Smeltzer, several significant figures support the motion/involvement relationship. The evaluation concept of "man" was enhanced significantly by the tracking shot (.05). If motion creates heightened potency/activity perceptions we could assume this is a result of the "involvement."

The semantic differential (Osgood et al. 1957), however, has long accepted masculine-feminine as an adjective pair that reflects potency. In this case the motion enhancing the potency/activity "agrees" with the subject, the man, and thus the evaluation is heightened. This would also support Mandell's findings of evaluation linked to the subject activity and camera angle agreeing.

In Smeltzer's dynamism (activity) dimension a negative correlation was significant between the GSR and the subjects' perceived dynamism of camera movement and tempo (.05). Since the GSR has long been used as a tool to measure audience response, this would appear to be opposite of the expected. This suggests that interest is not necessarily reflected physiologically, as is stress. We may, in fact, too often assume that attention and interest can only be maintained through stress and be measured as such (Kaiser and Roessler, 1970).

LIGHTING, COLOR AND EVALUATION

So far we see that subject movement, camera movement, and camera angle directly affect our perceptions of activity and potency, but only indirectly effect our judgments of evaluation. Is there a visual element that effects

our evaluation directly? Two studies by Tannenbaum seem to suggest there is (Tannenbaum 1959, 1955). In an attempt to find the effect of different lighting techniques on the way that people perceived models, four different models were shot with four different lighting techniques. The angles were below eye level, at the camera, above the camera and at a 45 degree lateral angle to the camera subject axis. A young woman, older man, older woman, and young man were used as models. Four groups were tested, each exposed to four pictures, one and only one of each model and one and only one of each version (lighting style). Twelve bi-polar scales of the semantic differential were used to rate them. In this study the only significant difference resulting from the various lighting styles appeared in the evaluative factor (.05) and this was attributed to the use of the 45° lighting angle which made the model look the best, and is common to photographic portraiture practice. This difference, nevertheless, is reflected in an evaluative way.

The most outstanding significant data came from differences which the subjects perceived between the various models, independent of the lighting technique. Judging by the various differences in the models it is not surprising, yet seems to support the idea of "visual grammar." Lighting and camera elements must be orchestrated in order to be effective.

In another study by Tannenbaum (1955) where color was tested in preference of product choice, another evaluative element was discovered. In the choice of several household products, different colors and intensities of colors were used (about 20 and 80% saturation). Although the preferences varied from product to product, there was a significant difference in the perceived quality of the product produced by color.

No one needs to be reminded of the old time westerns where the good guys wore white, etc. Evidently that still holds true. It is interesting to note

that in Smeltzer's study (1976) a panning shot can enhance the evaluative perception of color. It appears then that the visual "adjectives" have modifiers that only modify the modifiers. Smeltzer's statistics showed the panning shot did not significantly effect evaluation, as does color, nor potency and activity, as do camera angles. The panning shot did, however, effect the evaluative perception of color, which in turn effects the evaluation of the subject.

CONCLUSIONS

The cinemagraphic elements of each visual image work as a language and proper grammar must be used in order for the message to be conveyed in its most potent form. Ungrammatical visuals create a dissonance which will negate one of the perceptual dimensions.

Some elements such as camera angles work in a universal sort of way, and affect potency and activity. They can also indirectly heighten or nullify perceived evaluation if their visual cues from the camera position (activity and potency) are not in harmony with the apparent activity of the subject. Some elements are very irregular and must be conjugated individually, as with lighting, which significantly affects evaluation but is much stronger when coupled with the person/object in question. Yet other elements act as modifiers which only work in the presence of other modifiers, as the panning shot enhanced the color perception which affects evaluation.

Studies should be undertaken to explore the effect of observer involvement through the camera, the relationship of interest, stress and the GSR scores, as well as lighting styles and their effects on the perception as recorded by the semantic differential.

The approach to these elements should be as a continuum rather than a fixed element, as were the various types of shots and the lighting angles.

This would help avoid preccnceived concepts and limitations that could affect the efficacy of future studies.

Lastly, great care should be taken in the construction of the actual experiment. About two-thirds of the studies undertaken have integral gaping holes in the actual construction of their treatments which nullify what could be a greatly significant study towards their ends.

The visual elements of cinema may be simple tools, but they create a subtle and complex language that needs to be learned, word by word, line by line, in order for its full eloquence to be utilized and appreciated.

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REFERENCES

Eagle, M., The Effects of Subliminal Stimuli of Aggressive Content Upon Conscious Cognition. Journal of Personality, 1959, 27, 578-600

Goldberg, H.D. The Role of Cutting in the Perception of the Motion Picture. Journal of Applied Psychology, 1951, 35 (1), 70-71

Guthrie, G. and M. Wiener, Subliminal Perception or Perception of Partial Cue with Pictorial Stimuli. Journal of Personality and Social Psychology, 3:619-627, 1966

Isenhour, J.P. The Effects of Context and Order in Film Editing, AV Communication Review, 1975, 23(1), 69-80

Kaiser, C. and Roessler, R., Galvanic Skin Responses to Motion Pictures. Perceptual and Motor Skills, 1970, 30(2), 371-374

Klein, George S., Donald P. Spence, Robert R. Holt and Susannah Gourevitch Cognition Without Awareness:Subliminal Influences upon Conscious Thought, Journal of Abnormal and Social Psychology, 1958, 57:255-266

Mandell, Lee M., Donald L. Shaw, Judging People in the News-Unconsciously: Effect of Camera Angle and Bodily Activity. Journal of Broadcasting 17:3 (Summer 1973)

Miller, William C. Film Movement and Affective Response and the Effect on Learning and Attitude Formation. AV Communication Review 1969, 17:172-181

Osgood, C.E., Suci, G.J., and Tannenbaum, P.H., The Measurement of Meaning Urbana, Illinois: University of Illinois Press, 1957

Ruckmick, C.A. Affective Responses to the Motion Picture Situation by Means of the Galvanic Technique. The Psychological Bulletin, 1933 30(9), 712-713.

Smeltzer, Dennis K., The Psychophysiological Reactions of Male and Female Subjects With Varying Film Viewing Experience While Viewing Selected Cinemagraphic Elements. Doctoral Dissertation, Northern Illinois University, DeKalb, Illinois, 1976

Tannenbaum, Percy H., The Indexing Process in Communication, Public Opinion Quarterly, Fall, 1955, 292-302

Tannenbaum, Percy H. and James A. Fosdick, The Effect of Lighting Angle on the Judgment of Photographed Subjects. AV Communications Review 1960, 8:253-262

Tiemens, Robert K. Some Relationships of Camera Angle to Communicator Credibility. Journal of Broadcasting, 1970, XIV, No. 4 (Fall 1970)

Worth, S. Cognitive Aspects of Sequence in Visual Communication. AV Communications Review, 1968, 16(2), 121-145

Synopsis of "The Effect of Selected Cinemagraphic Elements on Audience Perception of Mediated Concepts

This paper is the re-interpretation of previous studies dealing with cinemagraphic elements. The theory proposed is that visual elements work together as a "visual grammar" which requires proper conjugation. Improper grammar results in a dissonance that is reflected in the activity/potency/evaluation scores of the semantic differential. For example, if activity and camera angles are not in agreement the subject may rate a low evaluation score and be perceived as "bad". Camera angles, motion, color and lighting are all touched upon as well as a continuum for "viewer involvment" through various camera/editing techniques.

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